

Impact 3.6-6: Implementation of the Proposed Project would result in fish passage being temporarily impaired during the in-stream construction phase.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, temporary impairment of fish passage would not occur because the project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Construction activities at the Upper Junction City site would not require temporary placement of low-flow channel crossings to move heavy equipment across the low-flow channels. Therefore, the impact would be less than significant at that site.

Implementation of Phase B at the Lower Steiner Flat site includes three temporary river crossings. Two low water crossings (X-1 and X-2), at RM 91.1 and 90.7, are required to construct the project, and the one temporary bridge crossing (X-3) at RM 90.7 is the access route for delivery of all spoil material from the river left elements to the upstream right bank spoil area (U-2). The crossings would be constructed to maintain adequate water depths and velocities for fish passage.

Coho Salmon

The crossings would only be constructed during late-summer, low-flow conditions (e.g., July 15–September 15). However, crossings of the river at low-flow conditions during other months (e.g., October–December) may occur via the bridge. Consequently, it is likely that some work adjacent to the channel would occur during the coho salmon spawning period. Use of the temporary bridge would be restricted to the timeframes outlined in the 2000 Biological Opinion (NMFS 2000).

Use of river crossings could occur during the onset of the fall coho smolt emigration, depending on seasonal conditions (flow, temperatures, etc.) and would occur during the coho adult migration and spawning period. Upon completion of work in riverine areas requiring use of low-flow channel crossings, these crossings would be dismantled and materials would be contoured to the river bottom. Fill materials would consist of appropriately sized spawning gravel as specified by NMFS and CDFG.

Fish passage design is normally based on the weakest species or life stage present that requires upstream access and should accommodate the weakest individual within that group. For the Proposed Project, low-flow channel crossings would need to meet velocity criteria for upstream migrating juvenile salmonids and depth criteria for migrating adult salmonids, including the federally threatened coho salmon. Maximum velocities and minimum depths are adopted from NMFS Guidelines for Salmonid Passage at Stream Crossings (NMFS 2001) and Part IX Fish Passage Evaluation at Stream Crossings of CDFG's California Salmonid Stream Habitat Restoration Manual (CDFG 2003a).

Although the construction period could extend into the smolt emigration and coho salmon spawning season, the effect of the low-water crossings on fish passage is expected to be temporary and minimal. Adult anadromous fish generally expend approximately 80 percent of their stored energy reserve during normal upstream migration to suitable spawning areas. Undue exertion or delay at stream-road crossings due to unsuccessful passage attempts at inadequate (blocking) structures can lead to reduced spawning success and pre-spawning mortality (Robison et al. 1999). Adequate depth and velocities over the crossing would allow both juvenile and adult passage. While long-term beneficial changes to physical rearing habitat associated with implementing the

Proposed Project are anticipated, the temporary impacts on fish passage would be considered significant.

Chinook Salmon

Potential impacts to Upper Klamath-Trinity Rivers ESU chinook salmon populations in the Trinity River would be similar to those previously described for coho salmon. However, adult migrants from the spring and fall runs of chinook salmon would be expected to pass through, stage, and/or spawn within the project boundaries during the construction season. The temporary placement of gravel fill at low-flow channel crossings would not preclude fish passage since adequate depths and velocities would be maintained at the crossings.

Steelhead

Potential impacts to the KMP ESU steelhead populations in the Trinity River resulting from implementation of the Proposed Project would be similar to those previously described for coho and chinook salmon.

Pacific Lamprey

Potential fish passage impacts to Pacific lamprey populations in the Trinity River resulting from implementation of the Proposed Project would be similar to those previously described for coho and chinook salmon and steelhead.

MITIGATION MEASURES

Implementation of the Proposed Project would result in fish passage being temporarily impaired during the in-stream construction phase. Therefore, mitigation measures 4.6-6a, 4.6-6b, 4.6-6c, and 4.6-6d described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

3.7 Vegetation, Wildlife, and Wetlands

This section describes the vegetation, wildlife, and wetlands that are known to occur at the Proposed Project sites and evaluates the impacts of the Proposed Project on these resources. The discussion of biological resources is based on a focused literature review, informal consultation with resource agencies, and observations made during field visits. Additional information about these resources is contained in Section 4.7 of the Trinity River Master EIR.

3.7.1 Affected Environment/Environmental Setting

3.7.1.1 Plant Communities

There are a variety of plant communities present at the Proposed Project sites. The plant communities known to occur at the sites are shown on Figures 15 and 16 and listed in Table 10. The identification and delineation of these habitat types are based on the draft *Trinity River Riparian Vegetation Map 2008 Update* (TRRP 2009). The main plant communities present are described below. Those plant communities as well as the others that are present at the sites are discussed in more detail in the Trinity River Master EIR (Section 4.7).



California State Plane Zone 1, NAD83 Feet

Imagery collected by Watershed Sciences Inc., on 8-25-2011



Figure 16. UJC Plant Community

- LEGEND**
- Environmental Site Limit (58.10 acres)
 - WHR Habitat Type**
 - Annual Grassland
 - Barren
 - Blue Oak-Foothill Pine
 - Freshwater Emergent Wetland
 - Klamath Mixed Conifer
 - Mixed Chaparral
 - Montane Hardwood
 - Montane Hardwood-Conifer
 - Montane Riparian
 - Urban
 - Valley Foothill Riparian

California State Plane Zone 1, NAD83 Feet

Imagery collected by Watershed Sciences Inc., on 8-25-2011




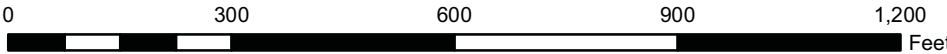
  <p>Prepared for the Bureau of Reclamation Trinity River Restoration Program</p>	<p>TRINITY RIVER RESTORATION PROGRAM - UPPER JUNCTION CITY 2012 PROPOSED CHANNEL REHABILITATION SITE ENVIRONMENTAL ASSESSMENT/INITIAL STUDY</p>	 <p>North Wind Services 1425 HIGHAM ST. IDAHO FALLS, ID 83402 WEB: www.northwindgrp.com Phone: (208) 528-8718 FAX: (208) 528-8714</p>
DATE: 2-08-2012	 <p>0 300 600 900 1,200 Feet</p>	

Table 10. Plant Community Types Within the Proposed Project Site Boundaries		
PLANT COMMUNITY TYPES	LSF (ACRES)	UJC (ACRES)
Montane riparian	19.123	6.691
Montane hardwood - conifer	15.494	1.076
Riverine	11.613	6.977
Annual grassland	9.305	10.162
Barren	0.736	14.940
Blue oak-foothill pine	—	3.410
Klamath mixed conifer	1.233	3.144
Urban	0.895	2.841
Valley foothill riparian	0.880	0.340
Montane hardwood	1.041	—
Mixed chaparral	0.251	1.393

MONTANE RIPARIAN

Montane riparian habitat occurs along the riparian berm adjacent to the OHWM of the Trinity River that runs along much of the base of the SR-299 and Steiner Flat Road embankments. Dominant tree species include white alder (*Alnus rhombifolia*), Fremont's cottonwood (*Populus fremontii* ssp. *fremontii*), Oregon ash (*Fraxinus latifolia*), black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), red willow (*Salix laevigata*), and shining willow (*Salix lucida*). Understory trees and shrubs include narrow-leaved willow (*Salix exigua*), arroyo willow (*Salix lasiolepis*), California wild grape (*Vitis californica*), Himalayan blackberry (*Rubus discolor*), California blackberry (*Rubus ursinus*), and virgin's bower (*Clematis ligusticifolia*).

MONTANE HARDWOOD-CONIFER

In the northern interior of California, the montane hardwood-conifer community consists of at least one-third conifer and at least one-third broadleaf trees scattered throughout the landscape in a mosaic-like pattern of small pure stands of conifers interspersed with small stands of broad-leaved trees (Holland 1986; Mayer and Laudenslayer 1988). Geographically and biologically, this plant community often serves as an ecotone between dense coniferous forest and montane hardwood, mixed chaparral, or open woodland vegetation types. Dominant tree species typically observed include Pacific madrone, bigleaf maple, ponderosa pine (*Pinus ponderosa*), gray pine (*Pinus sabiniana*), Douglas-fir, canyon live oak, and black oak. Shrub species include common manzanita, buck brush, cascara (*Rhamnus purshiana*), skunkbrush, snowberry, and poison-oak. The underlying herbaceous layer includes ripgut brome, cheatgrass, blue wild rye, silver bush lupine, purple sanicle, and false hedge-parsley.

RIVERINE

Riverine habitat is abundant within the Proposed Project sites and is characterized as the active Trinity River channel within the OHWM as defined by a HEC-RAS model developed for Reclamation. Riverine habitat is dominated by run and riffle areas, with boulder, cobble, gravel, and sand substrates. Vegetation within the active river channel is sparse with occasional clumps of torrent sedge (*Carex nudata*). Montane riparian habitat occurs adjacent to riverine habitat in the sites.

ANNUAL GRASSLAND

Annual grassland occurs mostly on the floodplains and gravel bars of the rehabilitation sites. This plant community is dominated by non-native grasses and forbs, including soft brome (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), cheatgrass (*Bromus tectorum*), rattail fescue (*Vulpia myuros*), Indian clover (*Trifolium albopurpureum*), yellow starthistle (*Centaurea solstitialis*), black mustard (*Brassica nigra*), and Dalmatian toadflax (*Linaria genistifolia*).

BARREN

Vegetation is very sparse in this habitat type consisting of opportunistic annual grasses and forbs, scattered willow seedlings and isolated clumps of willow sprouts.

BLUE OAK-FOOTHILL PINE

Blue oak-foothill pine habitat is present in foothill communities where (*Pinus sabiana*) (also known as gray pine) is the dominant overstory species. Blue oak (*Quercus douglasii*) grows among the gray pines and understory vegetation typically includes common manzanita (*Arctostaphylos patula*), buck brush (*Ceanothus cuneatus*), skunkbrush (*Rhus trilobata*), and poison oak (*Toxicodendron diversilobum*). The herbaceous layer includes ripgut brome, cheatgrass, and false hedge-parsley (*Torilis arvensis*).

KLAMATH MIXED CONIFER

Klamath mixed conifer habitats typically are tall, dense to moderately open, needle-leaved evergreen forests with patches of broad-leaved evergreen and deciduous low trees and shrubs. This habitat is dominated by tall evergreen conifers up to 200 feet in height with a rich shrub layer and well-developed herbaceous layers. On more xeric sites, the habitat is a generally open but very diverse forestland, having a well-developed shrub layer. The overstory layer is characterized by a mixture of conifers. Typical dominant conifers in the proposed project area are Douglas-fir (*Pseudotsuga menziesii* var. *menziesii*), Ponderosa pine, and incense cedar (*Calocedrus decurrens*). Occasional broadleaf trees include canyon live oak (*Quercus chrysolepis*), and black oak (*Q. kelloggii*).

VALLEY FOOTHILL RIPARIAN

Valley-foothill riparian habitats are found in valleys bordered by sloping alluvial fans, slightly dissected terraces, lower foothills, and coastal plains. They are generally associated with low velocity flows, flood plains, and gentle topography. Dominant species in the canopy layer are cottonwood, California sycamore and valley oak. Subcanopy trees are white alder, boxelder and Oregon ash. Typical understory shrub layer plants include wild grape, wild rose, California blackberry, blue elderberry, poison oak, buttonbrush, and willows. The herbaceous layer consists of sedges, rushes, grasses, miner's lettuce, Douglas sagewort, poison-hemlock, and hoary nettle.

MONTANE HARDWOOD

In montane hardwood communities, typical dominant tree species include Pacific madrone (*Arbutus menziesii*), bigleaf maple (*Acer macrophyllum*), canyon live oak, and black oak. Associated shrub species include common manzanita (*Arctostaphylos manzanita*), buck brush, skunkbrush, snowberry (*Symphoricarpos albus* var. *laevigatus*), and poison-oak. The underlying herbaceous layer includes ripgut brome, cheatgrass, blue wild rye (*Elymus glaucus*), silver bush lupine (*Lupinus albifrons*), purple sanicle (*Sanicula bipinnatifida*), and false hedge-parsley.

MIXED CHAPARRAL

Mixed chaparral is a structurally homogeneous brushland type dominated by shrubs with thick, stiff, heavily cutinized evergreen leaves. The dominant species typically include greenleaf manzanita (*Arctostaphylos patula*) and buck brush.

3.7.1.2 Wildlife Resources

The wildlife species typically associated with the primary plant communities present in the project areas (Table 10) are summarized in the Trinity River Master EIR (Section 4.7). Special-status species potentially occurring within, or in close proximity to, the rehabilitation sites are also discussed in the Trinity River Master EIR (Section 4.7 and Table 4.7-1). The Trinity River corridor provides habitat and travel corridors for such species as Pacific fisher, American marten, black-tailed deer, river otter, beaver, common merganser (*Mergus merganser*), green heron (*Butorides virescens*), black-crowned night heron (*Nycticorax nycticorax*), wood duck (*Aix sponsa*), belted kingfisher, cliff swallow (*Hirundo pyrrhonota*), bank swallow, and raccoon. The riparian vegetation along the Trinity River, in association with adjacent and/or nearby mixed-conifer and montane hardwood-conifer habitat, provides connected habitat within an area that has been fragmented by rural residential development and road building.

3.7.1.3 Non-Native and Invasive Plant Species

Non-native and invasive species are present at the Proposed Project sites. The approximate location and extent of high priority invasive plants were noted during vegetation surveys conducted for the sites. Invasive species observed at the Lower Steiner Flat site in April 2011 included common velvetgrass (*Holcus lanatus*), curly dock (*Rumex crispus*), dogtail grass (*Cynosurus echinatus*), hairy cats ear (*Hypochaeris radicata*), poison hemlock (*Conium maculatum*), rabbitfoot clover (*Trifolium arvense*), ripgut brome (*Bromus diandrus*), and Himalayan blackberry (*Rubus discolor*) (North Wind, Inc. 2011). Invasive species present at the Upper Junction City and Lower Junction City Rehabilitation Sites include black mustard (*Brassica nigra*), cheatgrass (*Bromus tectorum*), Dalmatian toadflax (*Linaria genistifolia*), yellow starthistle (*Centaurea solstitialis*), English plantain (*Plantago lanceolata*), moth mullein (*Verbascum blattaria*), peavine (*Melilotis alba*), poison hemlock, and Himalayan blackberry (North Wind, Inc. 2011).

The high priority noxious weeds that were most prevalent at the sites include Himalayan blackberry, yellow starthistle, and Dalmatian toadflax. Himalayan blackberry was dominant in the understory of the montane riparian habitat type. Yellow starthistle and Dalmatian toadflax dominated much of the annual grassland habitat type (USFWS and USBR 2011). Additional information regarding invasive species is presented in the Trinity River Master EIR (Section 4.7).

3.7.1.4 Jurisdictional Waters (Including Wetlands)

Eight jurisdictional water types, including wetlands and other waters, occur at rehabilitation sites along the Trinity River. Jurisdictional water types present in the Proposed Project sites are shown in Table 11. Each of these is briefly described below. Within the Lower Steiner Flat Rehabilitation Site boundaries there are a total of 31.798 acres of jurisdictional waters and within the Upper Junction City Rehabilitation Site boundaries there are a total of 14.055 acres. There are 20.185 acres of total wetlands at the Lower Steiner Flat site and 11.633 acres of other waters, comprised primarily of the Trinity River riverine feature. At the Upper Junction City site, there are 7.078 acres of total wetlands and 6.977 acres of riverine features in the form of the Trinity River, within the Upper Junction City ESL. The locations of these features are shown on Figures 17 and 18 for Lower Steiner Flat and Figure 19 for Upper Junction City. Jurisdictional waters were verified by the USACE during a January 11, 2012 site visit. Minimal changes to the wetlands depicted in this document were noted so that the final wetland maps will be very similar to those portrayed in this

EA/IS. A letter of jurisdictional determination has not yet been received for the USACE. There are approximately 0.5 acres of seasonal wetlands within the Lower Junction City ESL that were not originally surveyed. During construction, these resources would be avoided through adjustments to the boundary of the spoil area. A post-project delineation would be performed after 5 years to verify project impacts to waters of the U.S.

Table 11. Summary acreages of USACE Jurisdictional Waters and Wetlands within the Proposed Project Sites				
Feature Type		LSF Phase A (acres)	LSF Phase B (acres)	UJC (acres)
Perennial Stream (PS) / Riverine Trinity River	Total acres	11.613	11.613	6.977
	Impacted acres	0.356	0.832	0.253
	(Total length - feet)	(5,493)	(5,493)	(3,510)
Intermittent Stream (IS)	Total acres	0.020	0.020	—
	Impacted acres	0	0	
	(Total length - feet)	(489)	(489)	
Total Other Waters	Total acres Impacted acres	11.633 0.356	11.633 0.832	6.977 0.253
Riparian Wetland (RW) Above OHWM Below OHWM	Total acres	1.742	1.742	4.722
	Impacted acres	0	0.073	1.574
	Total acres	17.422	17.422	2.309
	Impacted acres	2.458	3.503	1.410
Seasonal Wet Meadow (SWM) Above OHWM Below OHWM	Total acres	0.030	0.030	—
	Impacted acres	0	0.026	
	Total acres	0	0	
	Impacted acres	0	0	
Depressional Wetland (DW) Above OHWM Below OHWM	Total acres	0.866	0.866	—
	Impacted acres	0.177	0.056	
	Total acres	0	0	
	Impacted acres	0	0	
Spring/Seep (SS) Above OHWM Below OHWM	Total acres	0.014	0.014	—
	Impacted acres	0	0	
	Total acres	0	0	
	Impacted acres	0	0	
Seasonal Wetland (SW) Above OHWM Below OHWM	Total acres	0.111	0.111	—
	Impacted acres	0.103	0.103	
	Total acres	0	0	
	Impacted acres	0	0	
Fresh Emergent Wetland (FE) Above OHWM Below OHWM	Total acres	—	—	0.047
	Impacted acres			0.008
	Total acres			0
	Impacted acres			0
Total Wetlands	Total acres Impacted acres	20.185 2.738	20.185 3.761	7.078 2.992
Total Jurisdictional Waters	Total acres Impacted acres	31.798 3.094	31.798 4.593	14.055 3.245



Figure 17. LSF Waters of the U.S. and Wetlands (Phase A Impacts)

LEGEND

Environmental Site Limit (ESL) (81.619 Acres)

Waters of the U.S. & Other Waters

Riverine (11.613 Acres)

Intermittent Stream (0.020 Acres)

Side Channel

Riverine Impacts (0.356 Acres)

Wetlands Above OHWM

Riparian Wetland (1.742 Acres)

Depressional Wetland (0.866 Acres)

Seasonal Wet Meadow (0.030 Acres)

Seasonal Wetland (0.111 Acres)

Seep/Spring (0.014 Acres)

Depressional Wetland Impacts (0.177 Acres)

Seasonal Wetland Impacts (0.103 Acres)

Wetlands Below OHWM

Riparian Wetland (17.422 Acres)

Riparian Wetland Impacts (2.458 Acres)

California State Plane Zone 1, NAD83 Feet

Imagery collected by Watershed Sciences Inc., on 8-25-2011



Prepared for the Bureau of Reclamation
Trinity River Restoration Program

**TRINITY RIVER RESTORATION PROGRAM - LOWER STEINER FLAT PHASE A (2012) AND PHASE B (FUTURE) PROJECTS
PROPOSED CHANNEL REHABILITATION SITE ENVIRONMENTAL ASSESSMENT/INITIAL STUDY**

DATE:
2-15-2012

0 500 1,000 1,500 2,000 Feet

SCALE:
1:3,674



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Figure 18. LSF Waters of the U.S. and Wetlands (Phase B Impacts)

LEGEND

Environmental Site Limit (ESL) (81.619 Acres)

Waters of the U.S. & Other Waters

Riverine (11.613 Acres)

Intermittent Stream (0.020 Acres)

Side Channel

Riverine Impacts (0.832 Acres)

Wetlands Above OHWM

Riparian Wetland (1.742 Acres)

Depressional Wetland (0.866 Acres)

Seasonal Wet Meadow (0.030 Acres)

Seasonal Wetland (0.111 Acres)

Seep/Spring (0.014 Acres)

Riparian Wetland Impacts (0.073 Acres)

Depressional Wetland Impacts (0.056 acres)

Seasonal Wet Meadow Impacts (0.026 Acres)

Seasonal Wetland Impacts (0.103 Acres)

Wetlands Below OHWM

Riparian Wetland (17.422 Acres)

Riparian Wetland Impacts (3.503 Acres)

California State Plane Zone 1, NAD83 Feet

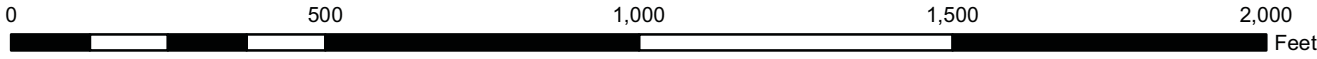
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Prepared for the Bureau of Reclamation
Trinity River Restoration Program

TRINITY RIVER RESTORATION PROGRAM - LOWER STEINER FLAT PHASE A (2012) AND PHASE B (FUTURE) PROJECTS
PROPOSED CHANNEL REHABILITATION SITE ENVIRONMENTAL ASSESSMENT/INITIAL STUDY

DATE:
2-15-2012



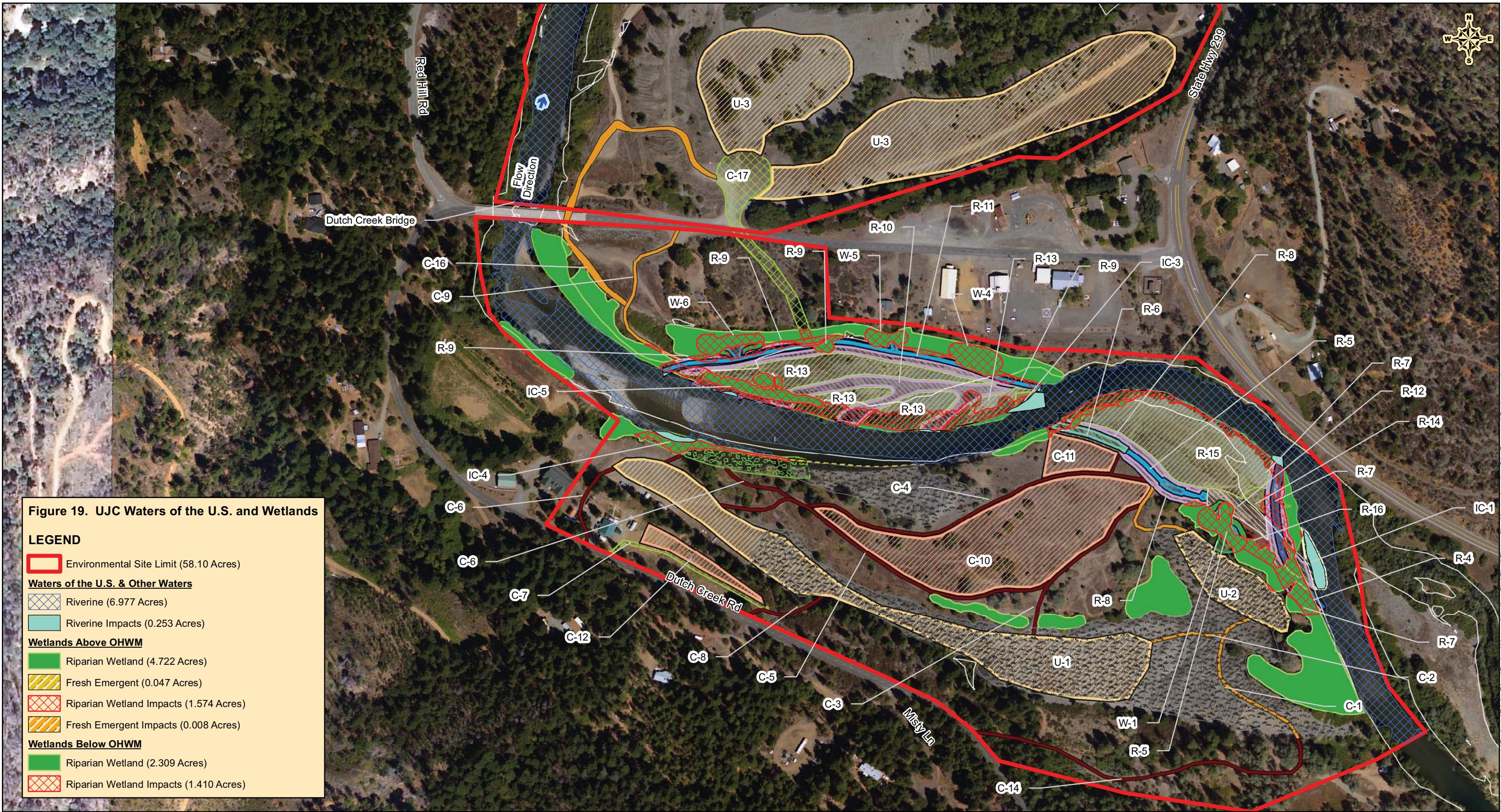
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California State Plane Zone 1, NAD83 Feet

Imagery collected by Watershed Sciences Inc., on 8-25-2011

 <p>Prepared for the Bureau of Reclamation Trinity River Restoration Program</p>	<p align="center">TRINITY RIVER RESTORATION PROGRAM - UPPER JUNCTION CITY 2012 PROPOSED CHANNEL REHABILITATION SITE ENVIRONMENTAL ASSESSMENT/INITIAL STUDY</p> <p>DATE: 1-19-2012</p> <p align="center">0 300 600 900 1,200 Feet</p> <p align="right">SCALE: 1:3,100</p>	 <p>North Wind Services 1425 HIGHAM ST. IDAHO FALLS, ID 83402 WEB: www.northwindgrp.com Phone: (208) 528-8718 FAX: (208) 528-8714</p>